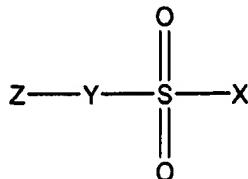


In the claims

1. (currently amended) A system adapted for use in a health-related environment comprising:

a biofilm resistant surface comprising an effective amount of bioavailable anti-fouling compound represented by general structure 1:



1

wherein

X represents -OH, -O(aryl), -O(acyl), -O(sulfonyl), -CN, F, Cl, or Br;

Y represents O, S, or Se, or NR;

Z represents optionally substituted alkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, aralkyl, heteroaralkyl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>, wherein when Z is substituted, a substituent is selected independently for each occurrence from the group consisting of halo, azido, alkyl, aralkyl, alkynyl, cycloalkyl, hydroxyl, alkoxy, amino, nitro, sulphydryl, imino, amido, silyl, alkylthio, sulfonyl, sulfonamido, formyl, heterocycl, aryl, heteroaryl, trifluoromethyl, and cyano;

R represents independently for each occurrence hydrogen, alkyl, heteroalkyl, aryl, heteroaryl, aralkyl, heteroaralkyl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>;

R<sub>80</sub> represents independently for each occurrence aryl, cycloalkyl, cycloalkenyl, heterocycl, or polycycl; and

m is an integer in the range 0 to 8 inclusive, and

wherein the compound is releasable from the surface.

2. (canceled)

3. (canceled)
4. (original) The system of claim 1, wherein Z represents optionally substituted alkyl, aryl, or  $-(CH_2)_m-R_{80}$ .
5. (currently amended) The system of claim 1 wherein Z represents optionally substituted alkylphenyl, arylphenyl, or heteroarylphenyl.
6. (original) The system of claim 1, wherein Z represents methyl, octyl, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
7. (canceled)
8. (canceled)
9. (original) The system of claim 1 wherein X represents -OH or Cl; and Y represents O.
10. (original) The system of claim 1, wherein X represents -OH, F, Cl, or Br; and Z represents optionally substituted alkyl, aryl, or  $-(CH_2)_m-R_{80}$ .
11. (original) The system of claim 1, wherein X represents -OH or Cl; and Z represents optionally substituted alkyl, aryl, or  $-(CH_2)_m-R_{80}$ .
12. (currently amended) The system of claim 1, wherein X represents -OH, F, Cl, or Br; and Z represents optionally substituted alkylphenyl, heteroalkylphenyl, arylphenyl, or heteroarylphenyl.
13. (currently amended) The system of claim 1, wherein X represents -OH or Cl; and Z represents optionally substituted alkylphenyl, heteroalkylphenyl, arylphenyl, or heteroarylphenyl.
14. (original) The system of claim 1, wherein X represents -OH, F, Cl, or Br; and Z represents methyl, octyl, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

15. (original) The system of claim 1, wherein X represents -OH or Cl; and Z represents methyl, octyl, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

16. (original) The system of claim 1, wherein Y represents O; and Z represents optionally substituted alkyl, aryl, or  $-(CH_2)_m-R_{80}$ .

17. (currently amended) The system of claim 1, wherein Y represents O; and Z represents ~~optionally substituted~~ alkylphenyl, ~~heteroalkylphenyl~~, arylphenyl, or heteroarylphenyl.

18. (original) The system of claim 1, wherein Y represents O; and Z represents methyl, octyl, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

19. (original) The system of claim 1, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents optionally substituted alkyl, aryl, or  $-(CH_2)_m-R_{80}$ .

20. (original) The system of claim 1, wherein X represents -OH or Cl; Y represents O; and Z represents optionally substituted alkyl, aryl, or  $-(CH_2)_m-R_{80}$ .

21. (currently amended) The system of claim 1, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents ~~optionally substituted~~ alkylphenyl, ~~heteroalkylphenyl~~, arylphenyl, or heteroarylphenyl.

22. (currently amended) The system of claim 1, wherein X represents -OH or Cl; Y represents O; and Z represents ~~optionally substituted~~ alkylphenyl, ~~heteroalkylphenyl~~, arylphenyl, or heteroarylphenyl.

23. (original) The system of claim 1, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents methyl, octyl, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

24. (original) The system of claim 1, wherein X represents -OH or Cl; Y represents O; and Z represents methyl, octyl, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

25. (original) The system of claim 1 wherein the biofilm resistant surface comprises a coating.

26. (original) The system of claim 25, wherein the coating is applied to a medical device.

27. (withdrawn) The system of claim 25, wherein the coating is applied to an implant.

28. (withdrawn) The system of claim 25, wherein the coating is applied to a graft.

29. (currently amended) The system of claim 1, wherein the effective amount decreases the amount of plant pathogens attached to a plant or plant component ~~over a defined period of time~~ by a factor of 4 relative to a control that does not comprise the compound.

30. (original) The system of claim 1, wherein the bioavailable antifouling compound is released from the biofilm resistant surface at a rate ranging from about 1 to about  $200 \mu\text{gcm}^2\text{d}^{-1}$ .

31. (canceled)

32. (original) The system of claim 1, wherein the bioavailable antifouling compound is released from the biofilm resistant surface as a sustained release.

33. (original) The system of claim 1, wherein the bioavailable antifouling compound is released from the biofilm resistant surface at a preselected rate.

34. (withdrawn) The system of claim 1, wherein the biofilm resistant surface is applied to an exterior surface of a living organism.

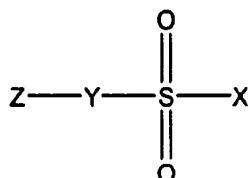
35. (withdrawn) The system of claim 34, wherein the bioavailable antifouling compound is carried in a vehicle adapted for application to the exterior surface of the living organism.

36. (withdrawn) The system of claim 35, wherein the vehicle is selected from the group consisting of liquids, gels, powders, ointments, salves, creams, pastes and paints.

37. (withdrawn) The system of claim 1, wherein the bioavailable antifouling compound is applied to an epidermal surface of a human being.

38. (original) The system of claim 1, wherein the bioavailable antifouling compound is released by a material incorporated as part of a medical device and wherein the biofilm-resistant surface is a surface of the medical device.

39. (currently amended) A coating comprising an effective amount of a bioavailable anti-fouling compound represented by general structure 1:



1

wherein

X represents -OH, -O(aryl), -O(acyl), -O(sulfonyl), -CN, F, Cl, or Br;

Y represents O, S, or Se, or NR;

Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteraryl, aralkyl, heteroaralkyl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>, wherein when Z is substituted, a substituent is selected independently for each occurrence from the group consisting of halo, azido, alkyl, aralkyl, alkynyl, cycloalkyl, alkoxy, nitro, imino, amido, silyl, alkylthio, sulfonyl, sulfonamido, formyl, heterocyclyl, aryl, heteraryl, and trifluoromethyl;

R represents independently for each occurrence hydrogen, alkyl, heteroalkyl, aryl, heteroaryl, aralkyl, heteroaralkyl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>;

$R_{80}$  represents independently for each occurrence aryl, cycloalkyl, cycloalkenyl, heterocyclyl, or polycyclyl; and

m is an integer in the range 0 to 8 inclusive,

wherein when the coating is applied to a surface of an article the coating releases the compound, thereby impairing biofilm formation on the surface.

40. (canceled)

41. (canceled)

42. (previously presented) The coating of claim 39, wherein Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, aryl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>.

43. (currently amended) The coating of claim 39, wherein Z represents ~~optionally substituted~~ alkylphenyl, arylphenyl, or heteroarylphenyl.

44. (previously presented) The coating of claim 39, wherein Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

45. (canceled)

46. (canceled)

47. (original) The coating of claim 39, wherein X represents -OH or Cl; and Y represents O.

48. (previously presented) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; and Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, aryl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>.

49. (previously presented) The coating of claim 39, wherein X represents -OH or Cl; and Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, aryl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>.

50. (currently amended) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; and Z represents ~~optionally substituted~~ alkylphenyl, heteroalkylphenyl, arylphenyl, or heteroarylphenyl.

51. (currently amended) The coating of claim 39, wherein X represents -OH or Cl; and Z represents ~~optionally substituted~~ alkylphenyl, heteroalkylphenyl, arylphenyl, or heteroarylphenyl.

52. (previously presented) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

53. (previously presented) The coating of claim 39, wherein X represents -OH or Cl; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

54. (previously presented) The coating of claim 39, wherein Y represents O; and Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, aryl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>.

55. (currently amended) The coating of claim 39, wherein Y represents O; and Z represents ~~optionally substituted~~ alkylphenyl, heteroalkylphenyl, arylphenyl, or heteroarylphenyl.

56. (previously presented) The coating of claim 39, wherein Y represents O; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

57. (previously presented) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, aryl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>.

58. (previously presented) The coating of claim 39, wherein X represents -OH or Cl; Y represents O; and Z represents optionally substituted branched alkyl or unbranched C<sub>2</sub>-C<sub>7</sub> alkyl, aryl, or -(CH<sub>2</sub>)<sub>m</sub>-R<sub>80</sub>.

59. (currently amended) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents ~~optionally substituted~~ alkylphenyl, ~~hetero~~alkylphenyl, arylphenyl, or heteroarylphenyl.

60. (currently amended) The coating of claim 39, wherein X represents -OH or Cl; Y represents O; and Z represents ~~optionally substituted~~ alkylphenyl, ~~hetero~~alkylphenyl, arylphenyl, or heteroarylphenyl.

61. (previously presented) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

62. (previously presented) The coating of claim 39, wherein X represents -OH or Cl; Y represents O; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

63. (previously presented) The coating of claim 39, wherein the coating is temporary.

64. (canceled)

65. (canceled)

66. (original) The coating of claim 39, wherein the release rate of the compound from the surface is in the range of about 1 to about 200 $\mu\text{gcm}^2\text{d}^{-1}$ .

67. (canceled)

68. (original) The coating of claim 39, wherein the release of the compound is a sustained release.

69. (canceled)

70. (previously presented) The coating of claim 39, wherein the coating is formulated as a composition selected from the group consisting of gas, vapor, aerosol, paste, gel, liquid, wax, caulk, adhesive, polymerizable compositions and paint.

71. (original) The coating of claim 39, wherein the article can be implanted in a living body.

72. (original) The coating of claim 39, wherein the article can be inserted in a living body.

73. (original) The coating of claim 39, wherein the article can be applied to a living body.

74. (original) The coating of claim 39, wherein the coating is employed as an agent selected from the group consisting of glue, cement and adhesive.

Claims 75-88 (canceled)

89. (previously presented) The coating of claim 39, wherein the article is selected from the group consisting of grafts, implants and medical devices.

90. (previously presented) The coating of claim 39, wherein the article is a plant or plant component.

91. (previously presented) The coating of claim 90, wherein the effective amount decreases the amount of plant pathogens attached to the plant or plant component by a factor of 4 relative to a control that does not comprise the compound.